

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claims 1-16 (Canceled)

17. (New) An optical component with a low reflectance for ultraviolet light in a wavelength range between approx. 180 nm and approx. 370 nm for high angles of incidence, comprising:

ay a substrate having at least one surface;

a multilayer system of at least six stacked layers arranged to the at least one surface of the substrate to provide a reduction of reflection, each of the layers comprising a high refractive or a low refractive dielectric material;

wherein:

only one high refractive material and only one low refractive material are used;

the low refractive material consists substantially of magnesium fluoride and the high refractive material consists substantially of aluminum oxide;

a first layer contacting the substrate consists substantially of aluminum oxide;

a second layer contacting the first layer has an optical thickness equal to or less than (0.33λ) , where λ is the working wavelength in the ultraviolet wavelength range; and

none of the layers has a geometrical layer thickness of more than about (0.5λ) .

18. (New) An optical component according to claim 17, wherein none of the layers has a geometrical layer thickness of more than about (0.35λ)

19. (New) An optical component according to claim 17, wherein none of the layers has an optical layer thickness of more than about (0.52λ)

20. (New) An optical component according to claim 17, wherein the first layer has an optical thickness in a range from (0.31λ) through (0.52λ) .

21. (New) An optical component according to claim 17, wherein the second layer contacting the first layer has an optical thickness equal to or less than (0.1λ) .

22. (New) An optical component according to claim 17, wherein the second layer contacting the first layer is the layer with the smallest optical thickness.

23. (New) An optical component according to claim 17, wherein a third layer contacting the second layer has an optical thickness equal to or less than (0.12λ) .

24. (New) An optical component according to claim 17, wherein none of the low refractive material layers has a geometrical layer thickness of more than about 70 nm.

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25. (New) An optical component according to claim 17, wherein the overall geometrical thickness of the multilayer system amounts to less than (2λ)

26. (New) An optical component according to claim 17, wherein the overall geometrical thickness of the low refractive material layers amounts to less than at least one of λ and (0.5λ)

27. (New) An optical component according to claim 17, wherein the multilayer system has no more than six layers.

ay 28. (New) An optical component according to claim 17, wherein a ratio between the sum of the geometrical layer thicknesses of the low refractive material layers and the sum of the geometrical layer thicknesses of the high refractive material is below at least one of approx. 1.5 and approx. 1.2.

29. (New) An optical component according to claim 17, providing low reflectance in a wavelength range of visible light, wherein the reflectance between approx. 600 nm and approx. 700 nm is less than at least one of approx. 2% and approx. 1%.

30. (New) An optical component according to claim 17, wherein the reflectance of the optical component is less than at least one of approx. 1% and approx. 0.5% in an incident angle range between 0° and at least one of 40° and 50° .

31. (New) An optical component according to claim 17, wherein the substrate is made of one of fused silica glass and a crystalline fluoride.

32. (New) An optical component according to claim 17, being designed for a working wavelength of about $\lambda = 248$ nm.

33. (New) An optical component according to claim 17, wherein the reflectance within the working wavelength range covers a bandwidth of more than 1.1 below a given reflectance, wherein the bandwidth is the ratio between the wavelengths of the long-wave limit and the short-wave limit of the wavelength range, in which the reflectance lies below 0.3%.

ay 34. (New) An optical component with a low reflectance for ultraviolet light in a wavelength range between approx. 180 nm and approx. 370 nm for high angles of incidence, comprising:

a substrate having at least one surface;

a multilayer system of multiple stacked layers arranged to the at least one surface of the substrate to provide a reduction of reflection, each of the layers comprising a high refractive or a low refractive dielectric material,

a first layer contacting the substrate consisting substantially of a high refractive metal oxide;

a second layer contacting the first layer having an optical thickness equal to or less than (0.1λ) , where λ is the working wavelength in the ultraviolet wavelength range;

a third layer contacting the second layer having an optical thickness equal to or less than (0.12λ) ; and

none of the layers having a geometric layer thickness of more than about (0.35λ) .

35. (New) An optical component according to claim 34, wherein the second layer contacting the first layer is the layer with the smallest optical thickness.

36. (New) An optical component according to claim 34, wherein only one high refractive material and only one low refractive material are used.

ay 37. (New) An optical component according to claim 34, wherein the low refractive material consists substantially of at least one of a fluoride and magnesium fluoride.

38. (New) An optical component according to claim 34, wherein the high refractive material consists substantially of aluminum oxide.

39. (New) An optical component according to claim 34, wherein the multilayer system has at least six multiple stacked layers.

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40. (New) An optical component according to claim 34, wherein none of the low refractive material layers has a geometrical layer thickness of more than about 70 nm.

41. (New) An optical component according to claim 34, wherein the overall geometrical thickness of the multilayer system amounts to less than (2λ)

42. (New) An optical component according to claim 34, wherein the overall geometrical thickness of the low refractive material layers amounts to less than at least one of λ and $(0.5 \cdot \lambda)$

43. (New) An optical component according to claim 34, wherein the multilayer system has no more than six layers.

9y 44. (New) An optical component according to claim 34, wherein a ratio between the sum of the layer thicknesses of the low refractive material layers and the sum of the layer thicknesses of the high refractive material is below at least one of approx. 1.5 and approx. 1.2.

45. (New) An optical component according to claim 34, providing low reflectance in a wavelength range of visible light, wherein the reflectance between approx. 600 nm and approx. 700 nm is less than at least one of approx. 2% and approx. 1%.

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46. (New) An optical component according to claim 34, wherein the reflectance of the optical component is less than at least one of approx. 1% and approx. 0.5% in an incident angle range between 0° and at least one of 40° and 50°.

47. (New) An optical component according to claim 34, wherein the substrate is made of one of fused silica glass and a crystalline fluoride.

48. (New) An optical component according to claim 34, being designed for a working wavelength of about $\lambda = 248$ nm.

9y 49. (New) An optical component according to claim 34, wherein the reflectance within the working wavelength range covers a bandwidth of more than 1.1 below a given reflectance, wherein the bandwidth is the ratio between the wavelengths of the long-wave limit and the short-wave limit of the wavelength range, in which the reflectance lies below 0.3%.

50. (New) An optical component with a low reflectance for ultraviolet light in a wavelength range between approx. 180 nm and approx. 370 nm for high angles of incidence, comprising:

a substrate having at least one surface;

a multilayer system of at least six stacked layers arranged to the at least one surface of the substrate to provide a reduction of reflection;

wherein:

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a first layer contacting the substrate consists substantially of aluminum oxide and has an optical thickness equal to or less than about (0.5λ) ;

a second layer contacting the first layer consists substantially of magnesium fluoride and has an optical thickness equal to or less than about (0.33λ) , where λ is the working wavelength in the ultraviolet wavelength range; and

remaining layers alternate between consisting substantially of aluminum oxide and magnesium fluoride and have respective optical thicknesses equal to or less than about (0.5λ) .

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51. (New) An optical component according to claim 50, wherein the remaining layers have respective optical thicknesses equal to or less than about (0.3λ) .
